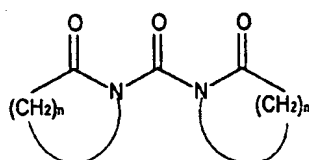


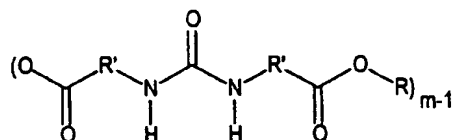
CLAIMS

1. A process for preparing a urea-containing polymer by contacting a hydroxy-functional organic compound having a functionality of two or more, with a  
 5 coupling agent in the presence of a strong base, characterised in that the coupling agent is a carbonylbislactam compound having the general formula (I):



(I)

- 10 wherein n is an integer from 3 to 15, and that the contacting is conducted at a temperature between 0°C and 80°C.
2. A process according to claim 1, wherein the temperature ranges between room temperature and 80°C, more preferably between 50°C and 60°C.
3. A process according to claim 1 or 2, wherein the carbonylbislactam compound  
 15 is carbonylbiscaprolactam (CBC).
4. A process according to any one of claims 1 to 3, wherein the strong base is at least one compound of the formula  $M(OR)_p$ ,  $M(OH)_p$ ,  $M(R)_p$ , or  $M(H)_p$ , wherein M is a metal from Groups I, II, III or IV of the Periodic System,  $p = 1-3$ , and R is  $C_{1-20}$  alkyl or  $C_{1-20}$  aryl(alkyl), or a tertiary amine combined with an epoxide,  
 20 or a compound that can be activated photo chemically to form a base.
5. A process according to any one of claims 1 to 4, wherein the hydroxy-functional organic compound is selected from the group consisting of hydroxy-functional polyethers, hydroxy-functional polyesters, hydroxy-functional polybutadienes, polysaccharides, hydroxy-functional poly(meth)acrylates,  
 25 hydroxy-functional polyolefines, polyvinylalcohols preferably partly esterified, or combinations thereof.
6. A polymer composition comprising a polymer with the following repeating unit,



based on a carbonyl bislactam compound having the general formula (I) and a multifunctional alcohol  $R(OH)_m$  in which  $m$  = functionality and  $R'$  represents  $(CH_2)_n$ .

7. Use of a polymer composition as defined in claim 6 or as obtained by the process of any one of claims 1 to 5, for tissue engineering.
8. Use of a polymer composition as defined in claim 6 or as obtained by the process of any one of claims 1 to 5, for coatings purposes.